

CLAIMS

1. A waveform generation method comprising steps of:
for a desired target waveform output from a D/A converter,
determining preliminarily an output value and an output
5 timing of the D/A converter so that a voltage variation amount
of the target waveform may be almost constant; and sequentially
generating the output value from the D/A converter, based
on the determined output value and output timing of the D/A
converter.
- 10 2. The waveform generation method according to claim 1,
further comprising a step of:
interpolating between the output values of the D/A
converter while a low pass filter is provided on an output side
of the D/A converter.
- 15 3. A program for generating a waveform employing data
created in accordance with a procedure of steps (a) to (f) and
stored in a time memory and a waveform memory, wherein
the waveform is output in accordance with a waveform output
processing procedure of steps (g) to (k);
- 20 (a) a step of approximating a target waveform v with a
plurality of functions $f_1(t)$, $f_2(t)$, $f_3(t)$, ...;
- (b) a step of calculating inverse functions of the
plurality of functions $f_1(t)$, $f_2(t)$, $f_3(t)$, ...;
- (c) a step of acquiring times t_1 , t_2 , t_3 , ... t_N
25 corresponding to output set-up voltage values V_1 , V_2 , V_3 , ...;

Vn of a D/A converter;

(d) a step of replacing the times $t_1, t_2, t_3, \dots t_N$ with time differences $T_1, T_2, T_3, \dots T_N$ between a current time and a previous time;

5 (e) a step of storing the time differences $T_1, T_2, T_3, \dots T_N$ in the time memory, wherein an initial value T_0 of the time difference is zero and stored at an address value 0000;

10 (f) a step of storing the output set-up voltage values V_1, V_2, V_3, \dots in the waveform memory, wherein an initial value V_0 of the waveform memory is stored at an address value 0000;

(g) a step of substituting an initial value of zero for a loop variable n ;

(h) a step of reading a n -th time data T_n from the time memory and setting the time data T_n in a predetermined timer;

15 (i) a step of initiating and counting the timer;

(j) a step of accepting a count end notification from the timer, reading a n -th waveform data from the waveform memory, and setting the output set-up voltage value V_n in the D/A converter; and

20 (k) a step of determining a completion status of a waveform output process by confirming the loop variable n , and repeating a series of processing from step (h) to step (j) by counting up the loop variable n until completion.

4. A waveform generation circuit comprising:

25 a time memory for storing an output time interval of

waveform output values preset discretely based on a desired target waveform;

a timing controller for setting up a timing at which a D/A conversion of the waveform output values is performed, based
5 on the output time interval stored in the time memory; and

a D/A converter for performing the D/A conversion of the waveform output values according to the timing set up in the timing controller;

5. The waveform generation circuit according to claim 4,
10 further comprising:

a low pass filter for interpolating between output values of the D/A converter.

6. A radar apparatus comprising:

the waveform generation circuit according to claim 4 or
15 5 as a modulation circuit for modulating the oscillation frequency of an oscillator.